

Defense Energy Support Center

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**Product
Technology
&
Standardization
Division**

Alternative Fuels Information Station

EPAcT Tutorial

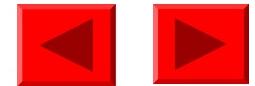


Learning Objectives

You should learn....

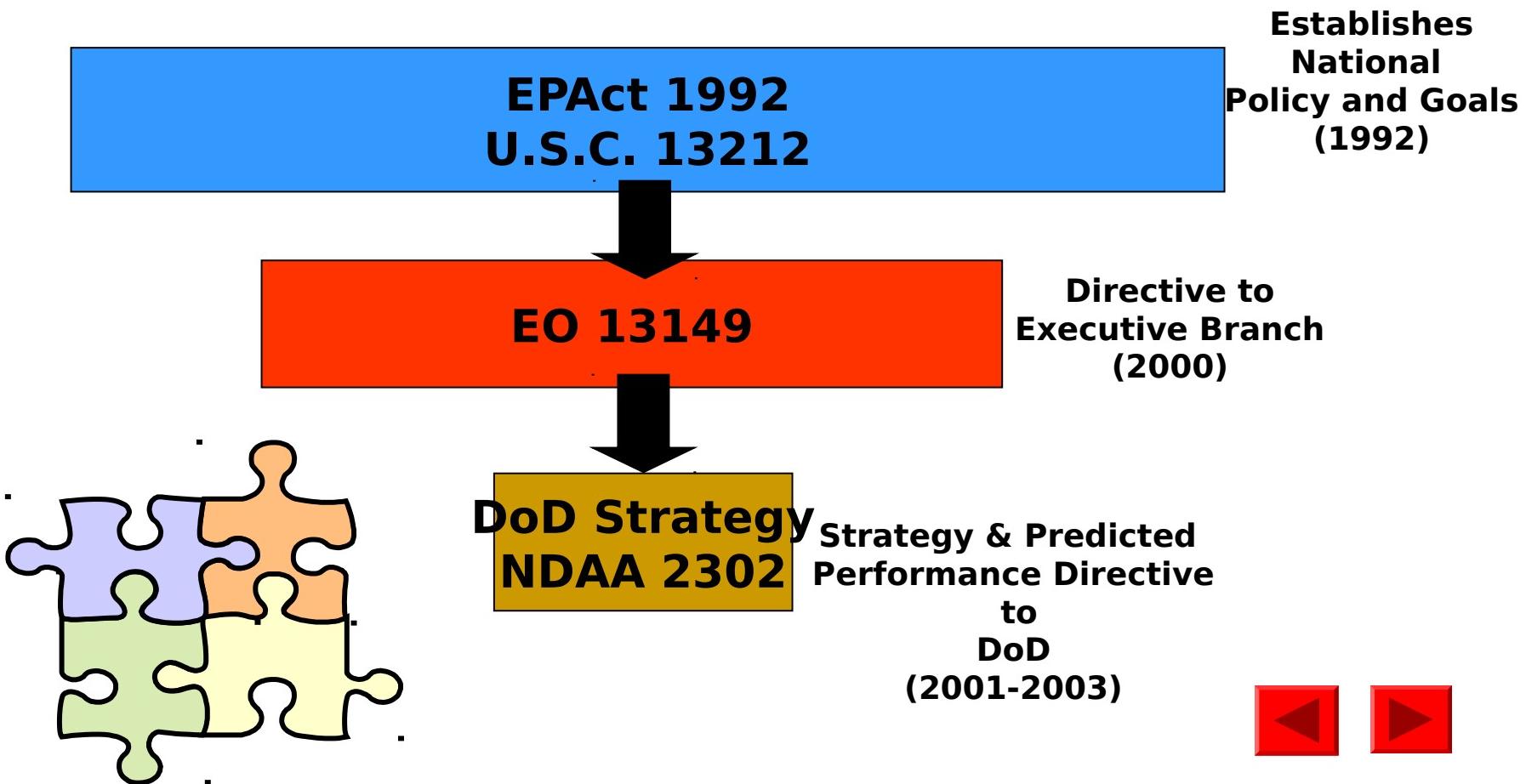


- How the Energy Policy Act (EPAct) applies to motor vehicles
- How compliance with EPAct is performed (within the Department of D
- What are EPAct credits and how they are used to measure compliance
- The definition of alternative fuels and alternative fuel vehicles



EPAct and You

Understanding the Relationships of the Directives



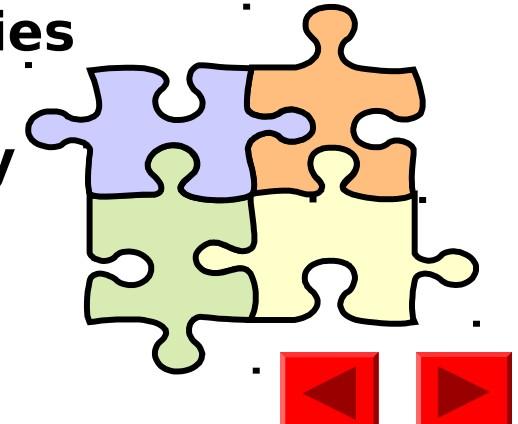
Purpose of EPAct

EPAct 1990



Purpose

- 1. Established a National Energy Policy & Goals**
- 2. Enhanced Energy Security Policies**
- 3. Improved Environmental Quality**



EPAct & Alternative Fuels

EPAct 1992

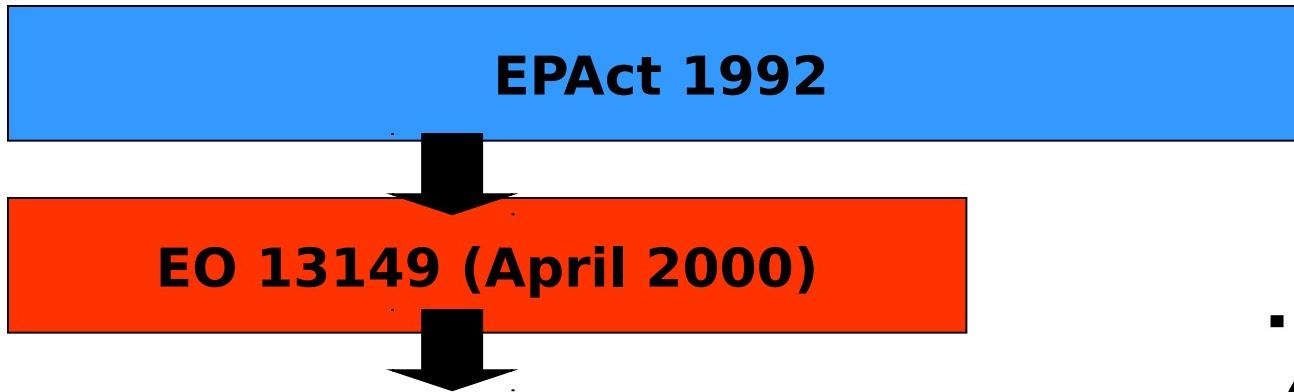


Definitions of Alternative
Fuels

- **Alcohols: Ethanol**
- **Gasoline with 85% mixtures of Alcohol**
- **Natural Gas and other domestic fuels derived from Natural Gas**
- **Liquefied petroleum gas**
- **Hydrogen and electricity**
- **Bio-Diesels (B20)**



E.O. 13149: Major Objectives



Objective: *"Each agency operating 20+ vehicles within the US shall reduce its entire fleet's annual petroleum consumption by at least 20% by the end of FY 2005, compared with FY 1999 petroleum consumption levels."*



Two Required Approaches:

* Military/Tactical Vehicles are excluded

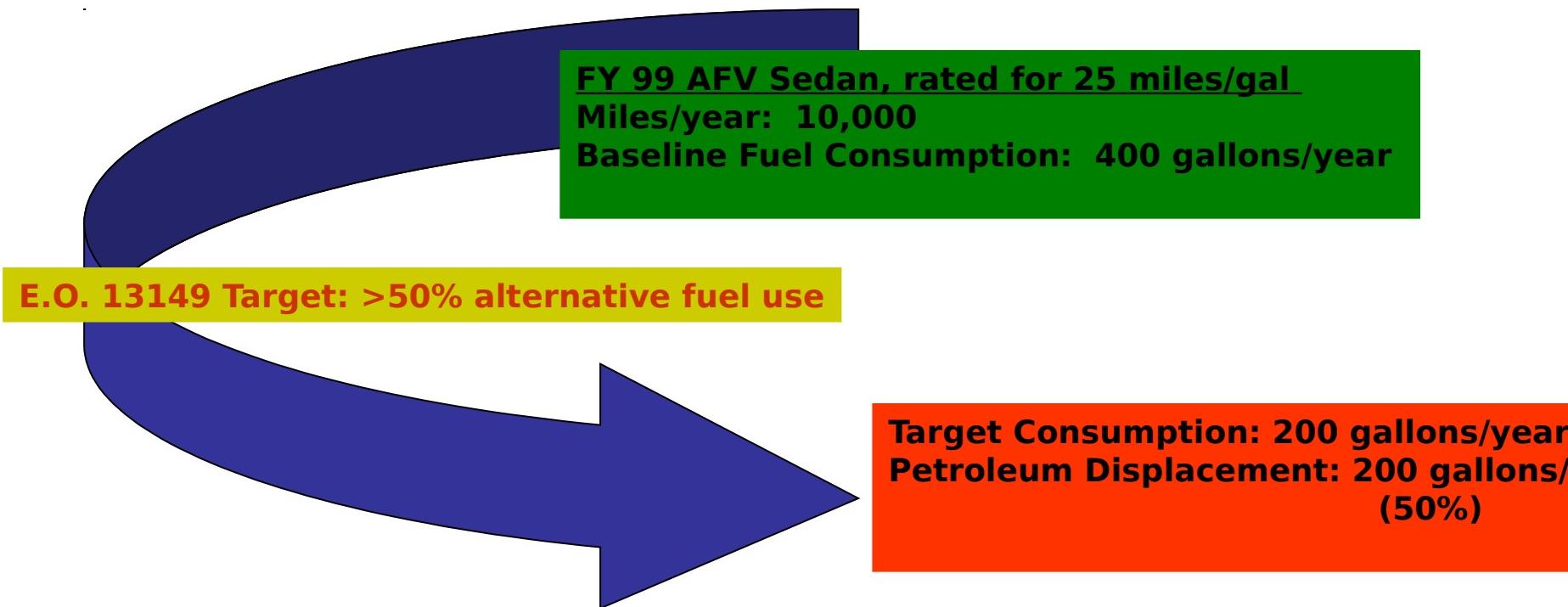
- Acquisition of alternative fuel vehicles (AFVs) plus use of alternative fuels in the majority of the time the vehicles are in operation)
- Acquisition of higher fuel economy vehicles

Note: EO 13149 measures progress of first approach by issuing EPAct Credits.

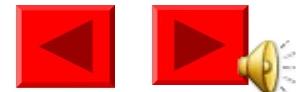


Use of Alternative Fuels in Alternative Fuel Vehicles

Example of Petroleum Displacement Achieved by Using Alternative Fuels

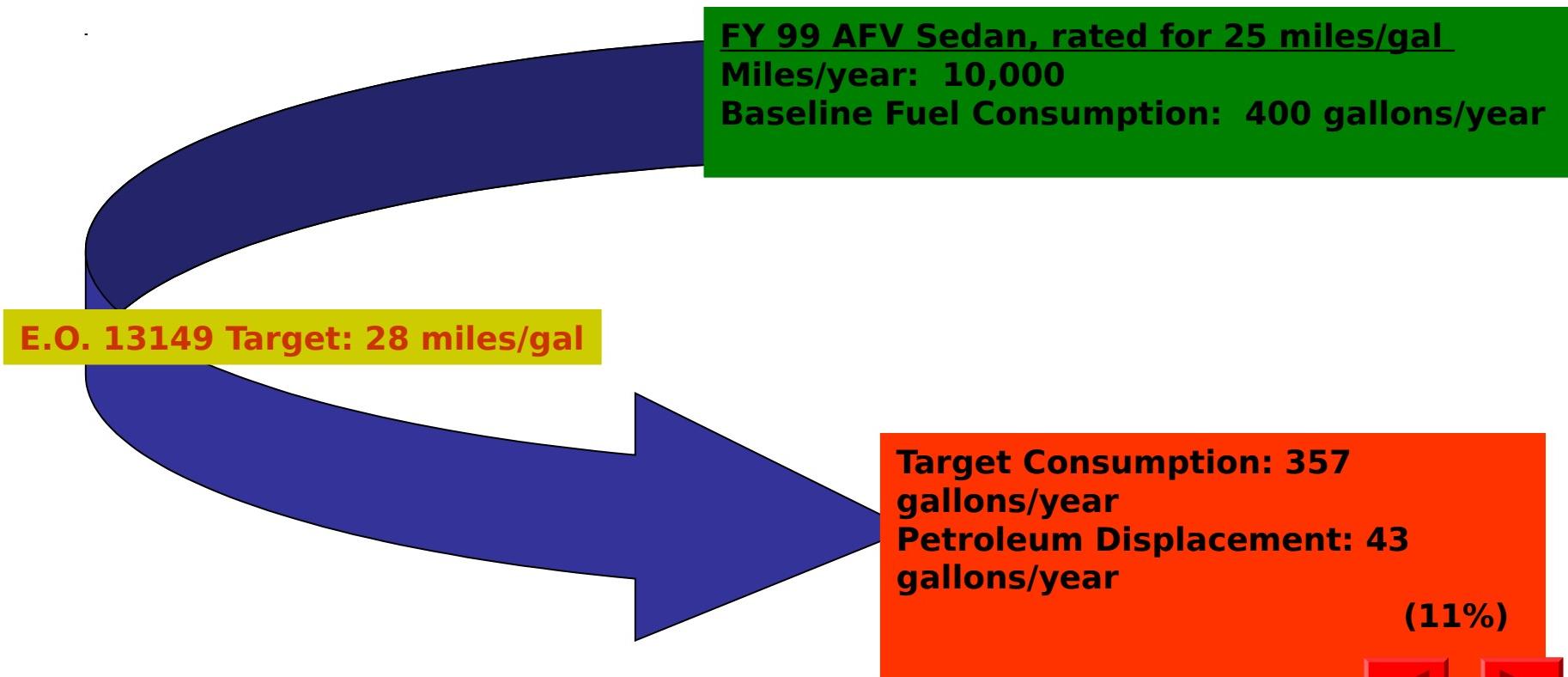


Source: EO 13149, Table 5



Use of Alternative Fuels in Alternative Fuel Vehicles

Example of Petroleum Displacement Achieved by Increased Fuel Economy



Source: EO 13149, Table 5



What is an Alternative Fuel Vehicle (AFV)?

EPAct 1992

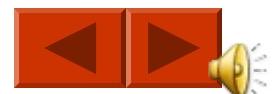
EO 13149 (April 2000)



“A dedicated, flexible fuel, bi-fuel, or dual fuel vehicle powered alternative fuel”

-Guidance Document: Greening the Government through Federal Fleet and Transportation Efficiency ,October 2000

- ❖ Bi-Fuel Vehicles have two separate fuel systems:
 1. Alternative Fuel
 2. Conventional Fuel
- ❖ Dual-Fuel Vehicles have two separate fuel storage systems and operate on a mixture of alternative fuel and petroleum based fuels
- ❖ Flexible Fuel Vehicles have a single storage tank capable of operating on an alternative fuel, a petroleum based fuel, or a mixture of the two fuels



Vehicle Classifications

GVWR= Gross Vehicle Weight Rating; the weight of a vehicle including payload

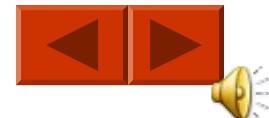
Light Duty Vehicle- A vehicle weighing 8,500 lbs GVWR or less
Example:



Medium Duty Vehicle- Vehicle between 8,500 and 16,000 lbs GVWR
Example:



Heavy Duty Vehicle- Vehicle weighing more than 16,000 lbs GVWR
Example:

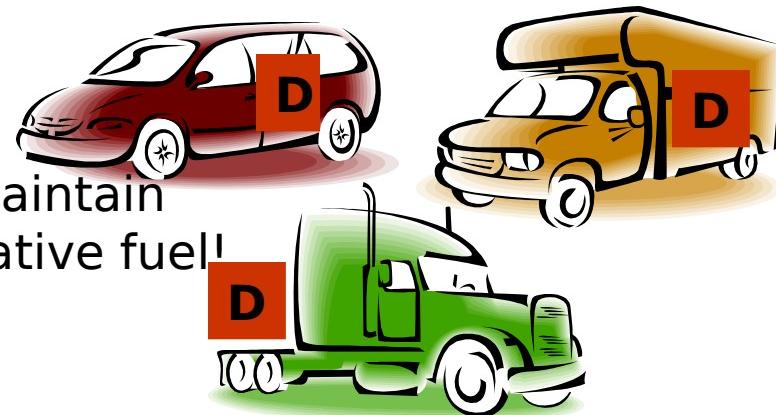


Dedicated Alternative Fuel Vehicles



Motor Vehicles that are designed to operate solely on alternative fuel

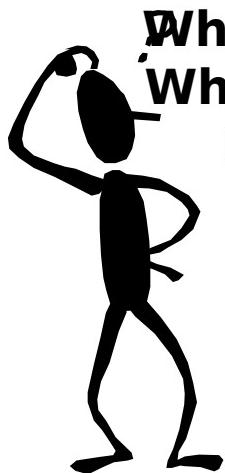
Dedicated AFVs & Electric vehicles receive additional EPAct credits in order to maintain emphasis on use of alternative fuel!



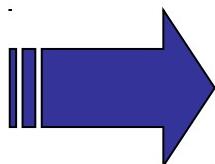
Vehicle Credits for EPAct Compliance

EPAct 1992

EO 13149 (April 2000)



- What is an EPAct credit?**
- What are they used for?**
- How do they work?**



EPAct Credits are units of measure assigned by Dept of Energy to assess the compliance of a federal agency toward the EPAct AFV acquisition goals Agencies earn AFV credits toward EPAct compliance for eAFV acquisition



Multiple EPAct Credit Scenarios

EPAct 1992

E.O. 13149

Credits Awarded	Situation Earning Credits
1	A light-duty, alternative fuel vehicle
2	A dedicated light-duty vehicle
3	A dedicated medium-duty, alternative fuel vehicle
4	A dedicated heavy-duty, alternative fuel vehicle
1	For every 450 gallons of pure biodiesel (equivalent to 2,250 gallons of B-20) used in diesel vehicles with earned credits of up to 50% of EPAct requirements only.

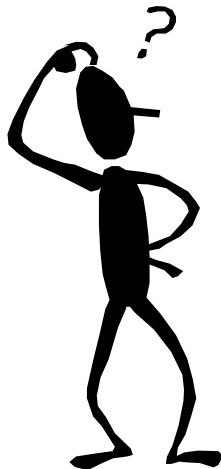


EPAct Credits

EPAct 1992



EO 13149 (April 2000)



How do EPAct credits work?

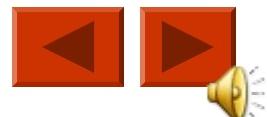
Agency A Purchases

5 Light Duty AFVs
(non-dedicated)

Agency B Purchases

3 Light Duty AFVs (non-dedicated)
1 Dedicated Medium Duty AFVs

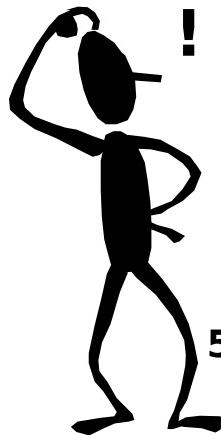
Which Agency will be credited more EPAct Credits?????



EPAct Credits Example

EPAct 1992

EO 13149 (April 2000)



! How do EPAct credits work?

Agency A Purchases

5 Light Duty AFVs (non-dedicated)

5 EPAct Credits

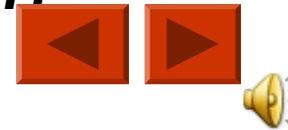
Agency B Purchases

3 Light Duty AFVs (non-dedicated)
1 Dedicated Medium Duty AFVs

6 EPAct Credits (Dedicated Medium Duty AFVs count as 3 Credits)

Which Agency will be credited more EPAct Credits???????

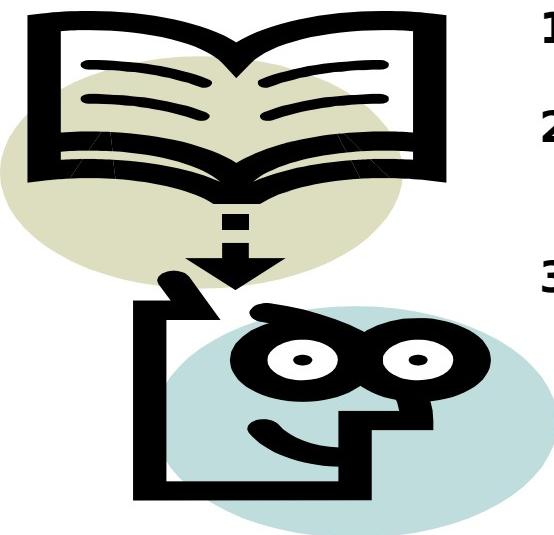
Agency B will actually receive more credits in this scenario!!



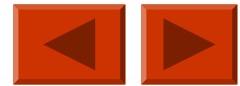
Other Important Things To Know

EPAct 1992

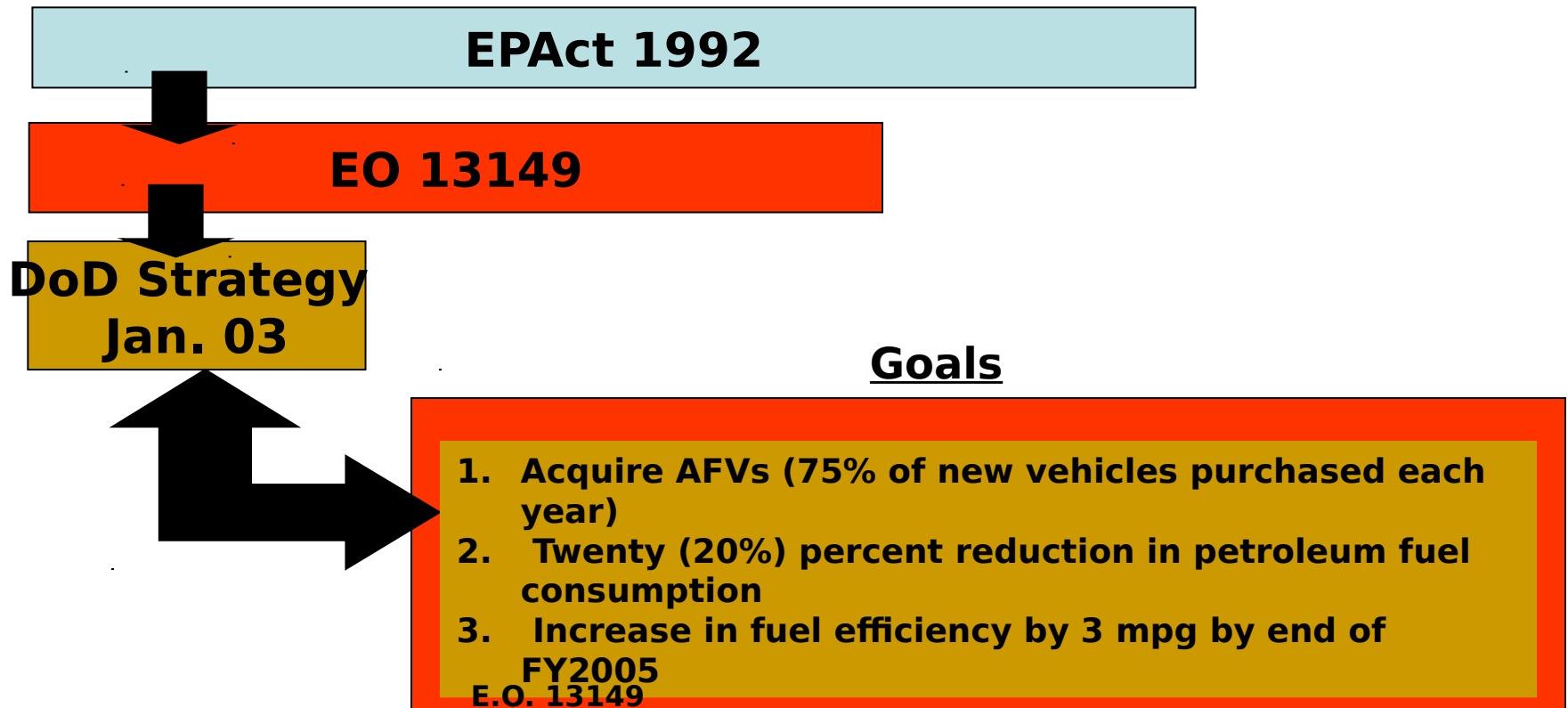
EO 13149 (April 2000)



1. After 1999, 75% of all vehicles purchase must be AFV
2. No more than 50% of your yearly EPAct credits can be Biodiesel Fuel based!
3. Agencies are expected to increase the fuel economy of the vehicle fleet (need 3 mpg improvement by 2001 1999 baseline)!



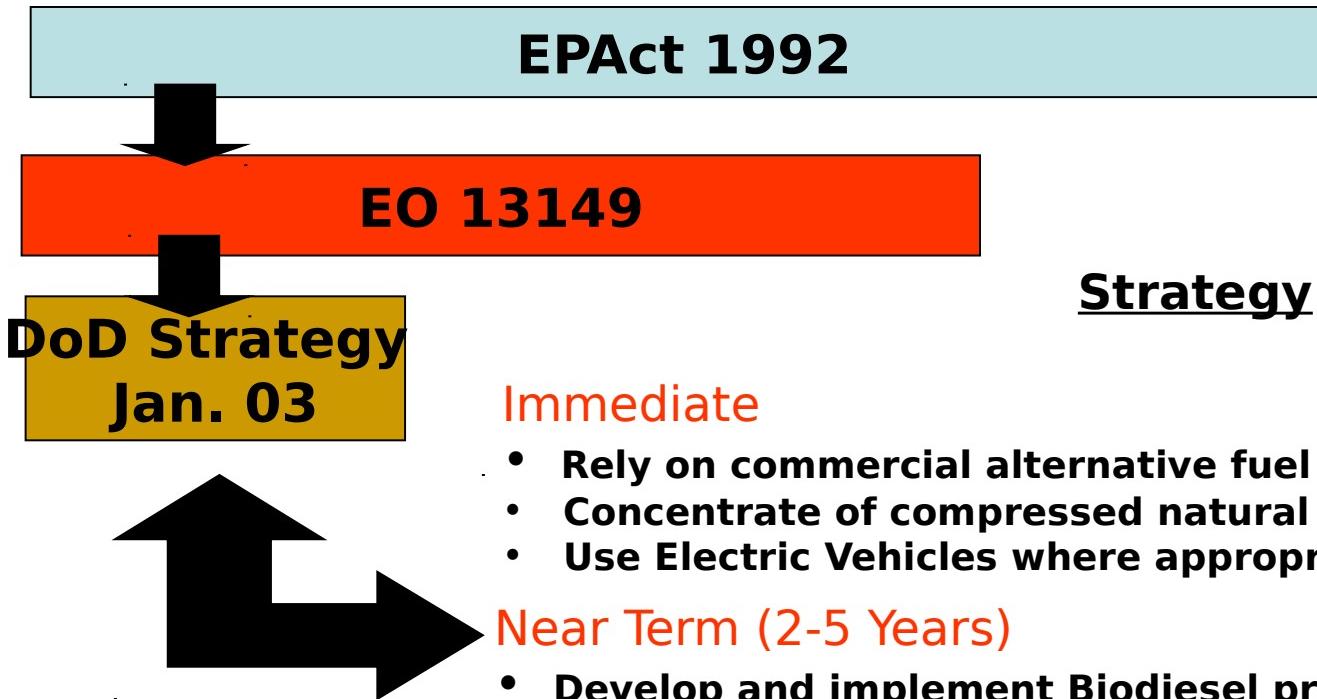
DoD Strategy for Compliance with E.O. 13149



Reference: Department of Defense Compliance Strategy for E.O. 13149
Alternative Fuel/Hybrid Vehicle Requirements



DoD Strategy (con't)



Immediate

- Rely on commercial alternative fuel infrastructure
- Concentrate on compressed natural gas (CNG)
- Use Electric Vehicles where appropriate (short distances)

Near Term (2-5 Years)

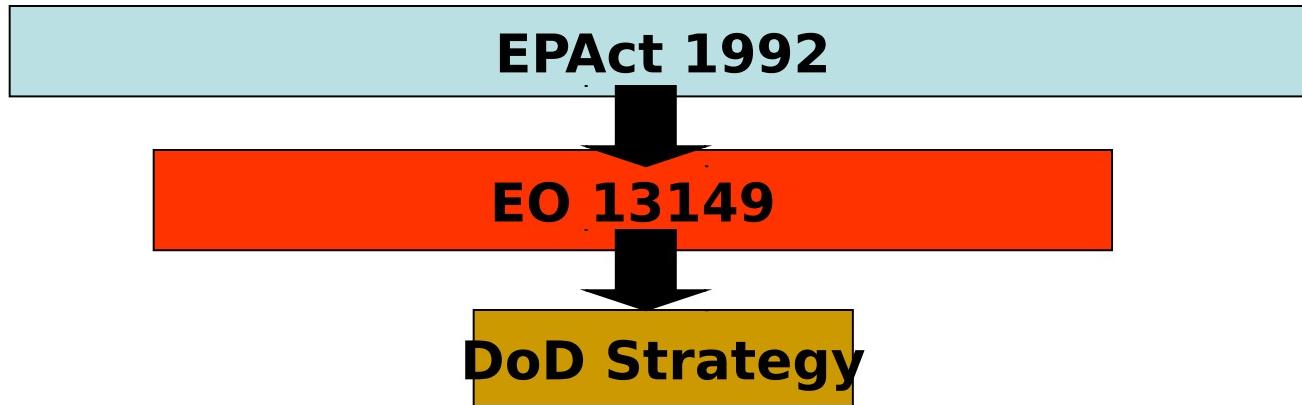
- Develop and implement Biodiesel products, specifically B20
- Use Hybrid vehicles to reduce petroleum consumption
- Work with OEMs to test & warranty biodiesel products in diesel engines
- Develop and implement Ethanol products, specifically E85

Long Term (5-20 Years)

- Develop and deploy hydrogen fuel cells as an alternate fuel
- Incorporate next generation electric cars (longer distances)



Summary



The listener should now understand.....

- How the Energy Policy Act (EPAct) applies to motor vehicles
- How compliance with EPAct is performed (within the Department of Defense)
- What are EPAct credits and how they are used to measure compliance
- The definition of alternative fuels and alternative fuel vehicles

